

Program to Begin Shortly

New Banner Clinical Practice for Ambulatory Management of Valley Fever

Implementation Begins Now
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12:15-12:45 PM

David Valenzuela MD & John Galgiani MD
Banner University Valley Fever Program



THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON
Valley Fever Center
for Excellence



Banner Health®

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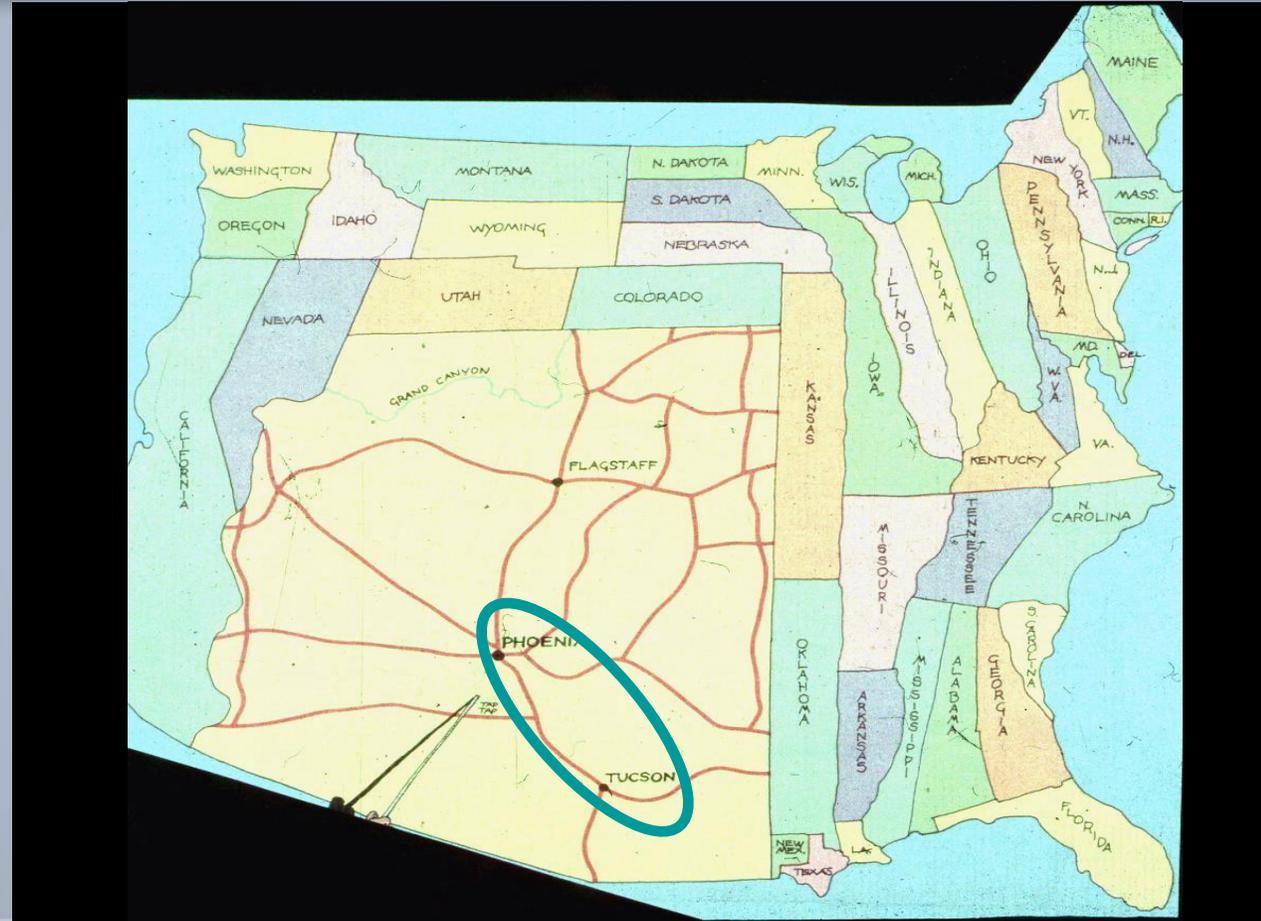
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What Is Valley Fever?

- Caused by soil fungi
 - Coccidioides immitis*
 - Coccidioides posadasii*
- Other names:
 - Coccidioidomycosis
 - “COCCI”
- Inhalation of one spore causes infection
- Spectrum of disease
 - Sub-Clinical: 60%
 - Self-Limited: 30%
 - Complicated: 10%
- After infection, most persons develop life-long immunity to a second infection



The Valley Fever Corridor: 2/3 of all US disease occur here



Common “Mild” Self-Limited Valley Fever

Signs and Symptoms, < 1 months from exposure:

- Cough, chest pain, fever, weight loss
- Fatigue
- Bone and joint pains (a.k.a. Desert Rheumatism)
- Skin rashes (painful or intense itching)

Course of illness:

- Weeks to months
- 25% of college students are sick for > 4 months
- 50% of workers lose > 2 weeks

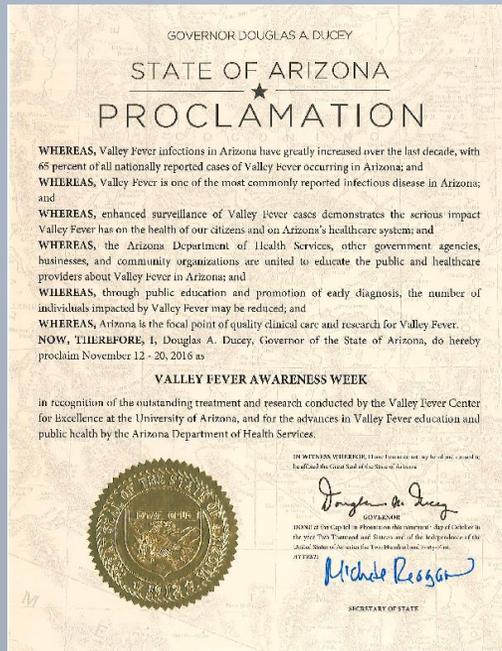
Coccidioidomycosis as Community-Acquired Pneumonia (CAP)

In Phoenix and Tucson
25 – 30% of all CAP
Is Valley Fever



22nd Anniversary of the UA VFCE

- Education
 - 2002 Valley Fever (FV) Awareness Program

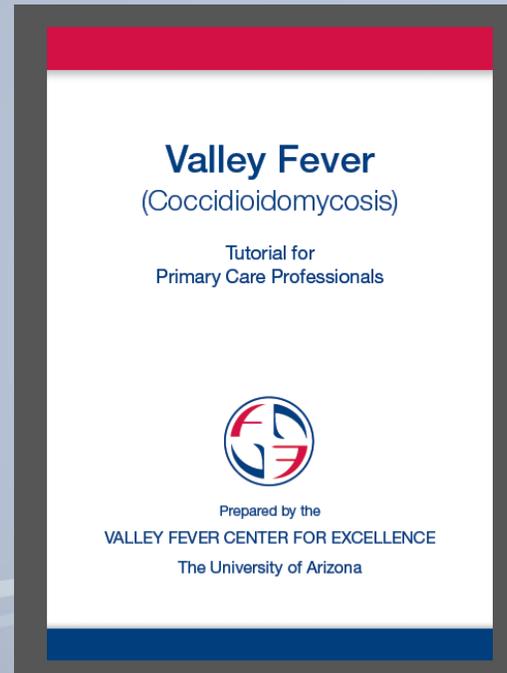


**16th Annual
Valley Fever
Awareness
Week
November
10th – 18th
2018**



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 - New VFCE website, ATS, CDC
- Research
 - \$25-35 million in funding: Epi., Immunol., Genetics, Diagnostics, Drugs, Vaccines



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- Clinical Care (?)

How bad is it?

Arizona CAP

- ~ 25% - 30% due to Coccidioides
- BUT

- < 15% are tested for Coccidioides

~ 1,000 new AZ medical licenses/year

- 12% received MD in AZ
- 40% no AZ GME

80% didn't know:

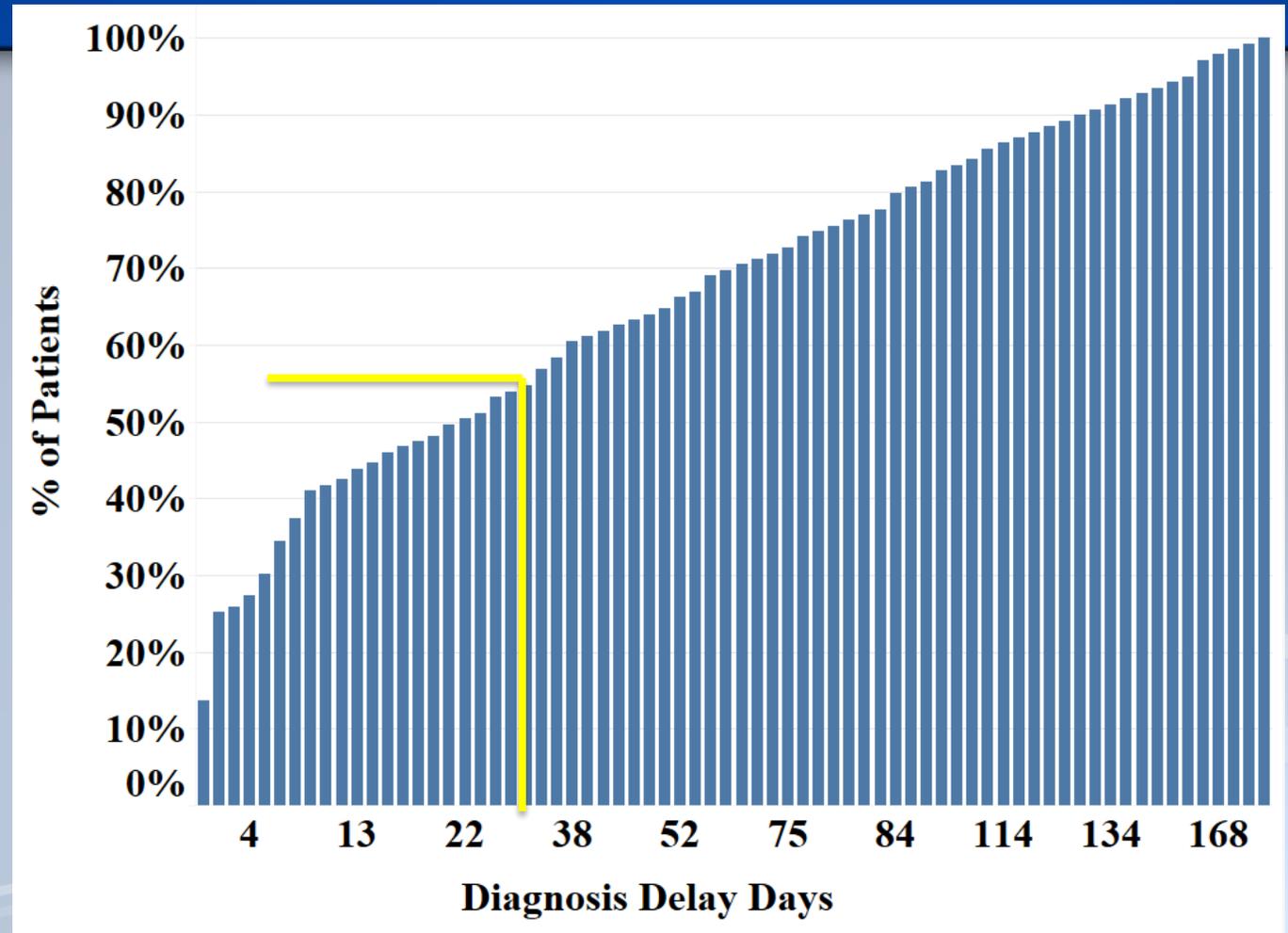
- VF is reportable
- Vaccine does not exist

40% of clinicians are not confident to treat VF



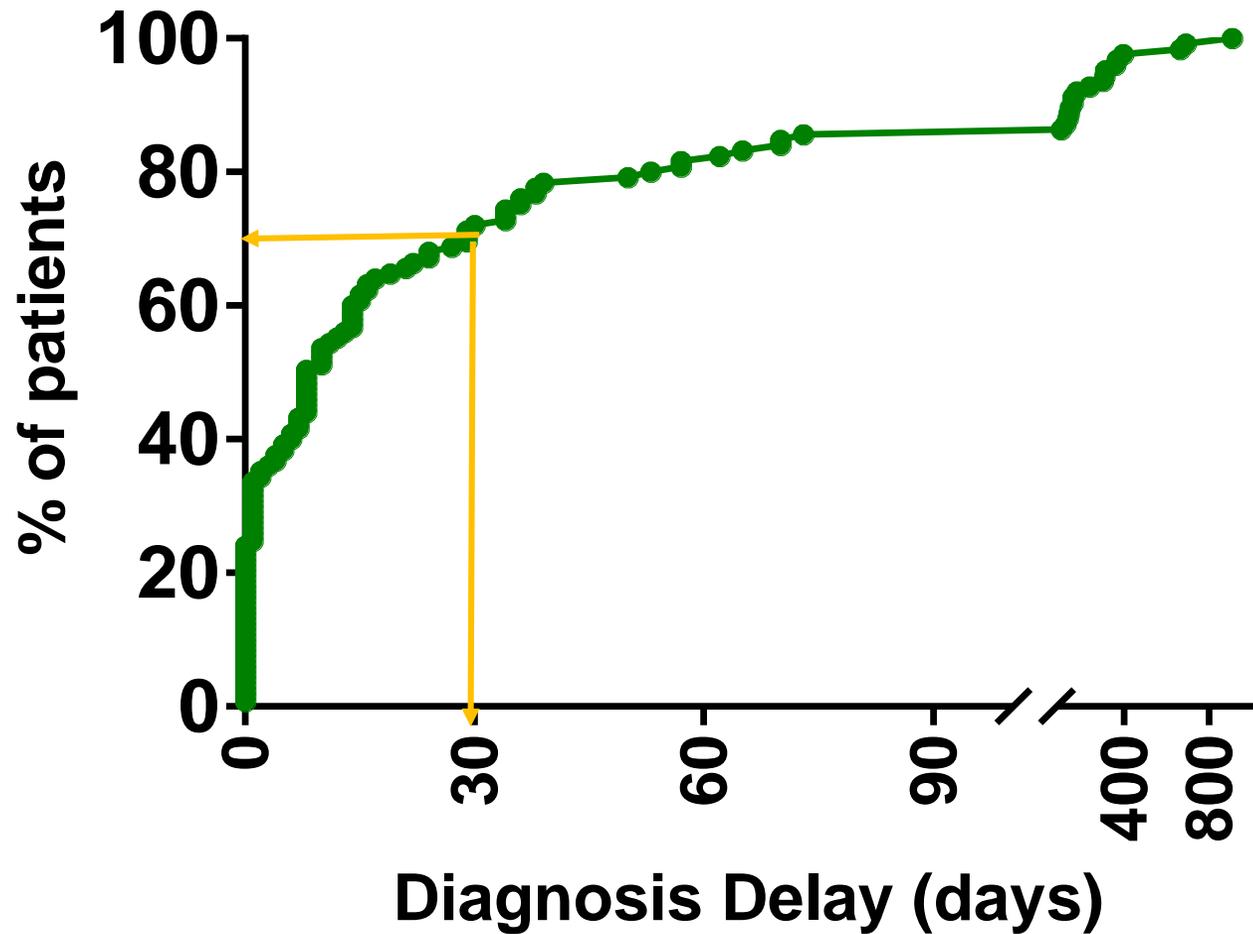
Delay of Valley Fever Diagnosis: BUMC-P

45% of Diagnoses
Delayed > 1 month



Delay of Valley Fever Diagnosis: BUMC-T

30% of Diagnoses
Delayed > 1 month



What Do Weeks of Delayed Diagnosis Mean?

- Unnecessary anti-bacterial drug use
- Protracted patient anxiety and fear
- Over-utilization CT scans and bronchoscopies, even thoracotomies

Hypothesis: Earlier diagnosis would improve outcomes and reduce cost

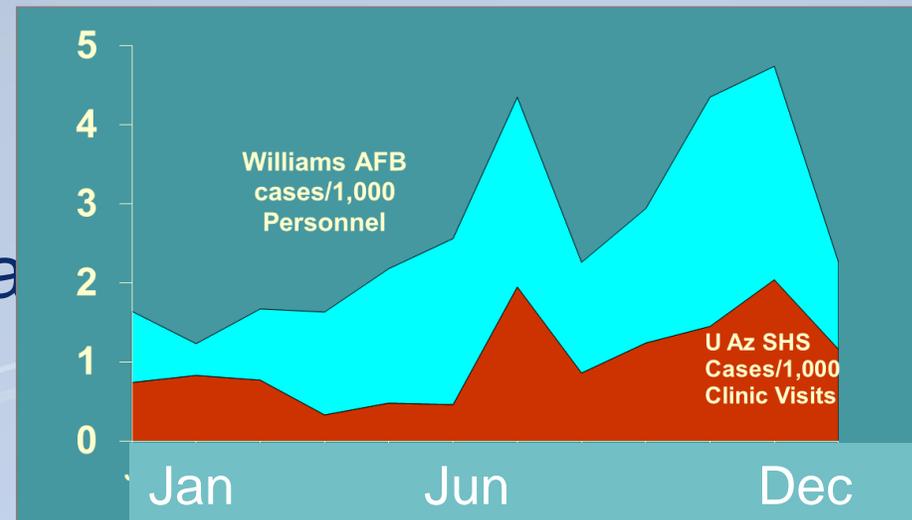
Primary Care of Coccidioidomycosis

C onsider the diagnosis
O rder the right tests
C heck for risk factors
C heck for complications
I nitiate management



Consider the diagnosis in Arizona

- In Arizona, Valley Fever is very common. It should be in the differential often.
- More frequent between the monsoons and the winter rains.
- Syndromes:
 - Always in community acquired
 - Rheumatism.
 - Rashes.



Orders the Right Tests: EIA screen for Coccidioidal Antibodies

Enzyme Immunoassay (EIA) test

- **A positive test** is very specific and usually is diagnostic.
- **A negative test** never rules out Valley Fever. Repeated testing improves diagnostic sensitivity.



Check Risk Factors for

Pulmonary Complications

- Diabetes mellitus
- Cardio-pulmonary or other co-morbidities (Evidence: “common sense”).

Disseminated Infection

- Cell immunodeficiency
- Males > Females
- Racial background
 - African or Filipino
- Adults > Children
- Pregnancy

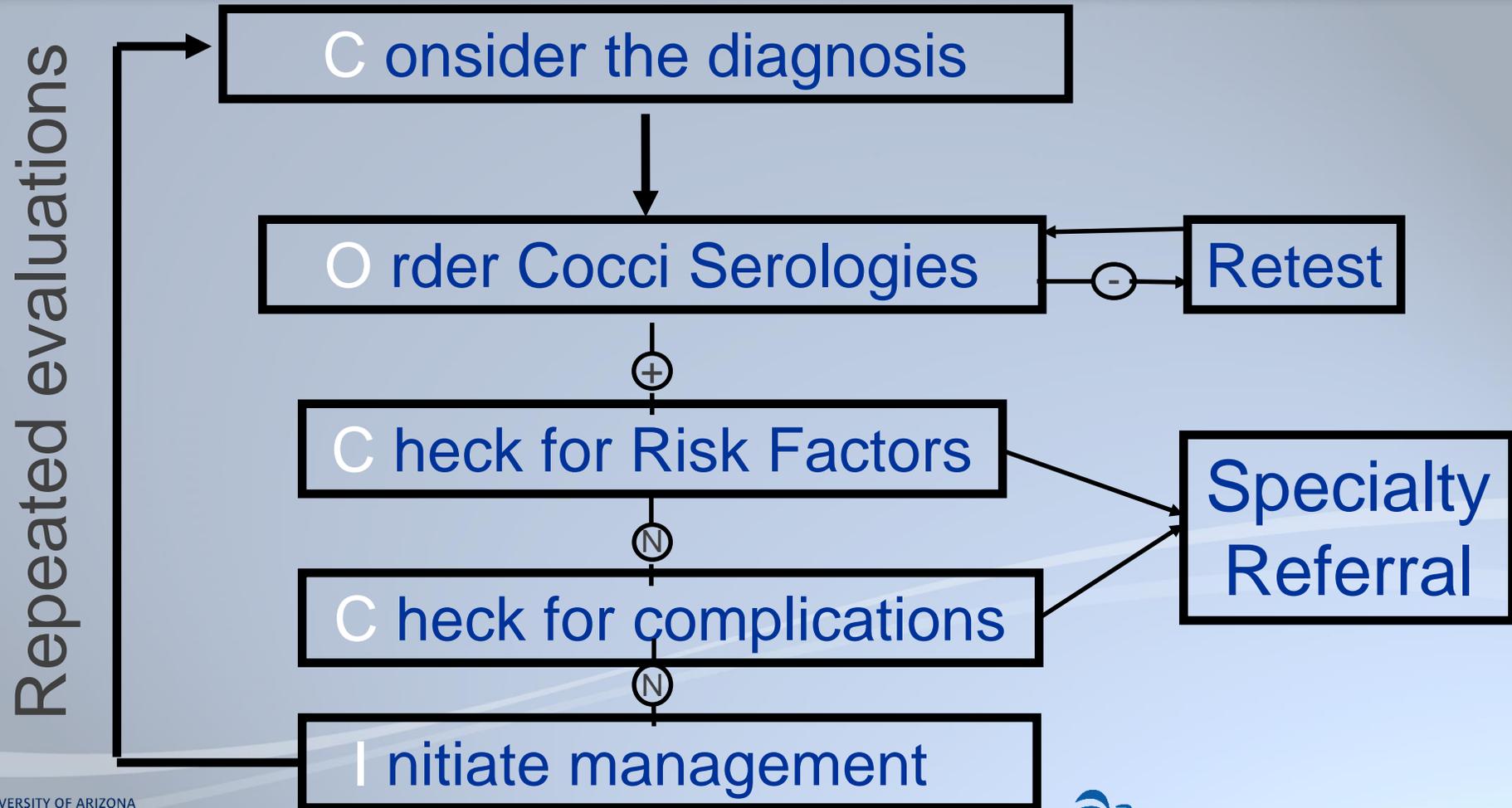


Check for Complications

- Most complications are focal
- **A review of systems and physical examination will usually detect or exclude the possibility of complications.**
- If new focal findings are present, further imaging and laboratory studies can determine if they are related to infection.



Primary Care of Coccidioidomycosis



Initiate Management for Low Risk - Simple Early Infection

- Follow-up office visits
- Serial body weights
- Check for new symptoms or signs
- Repeat coccidioidal antibody testing
- Repeat Chest PA and Lateral X-rays
- Most patients do not need therapy



The Valley Fever Tool Kit

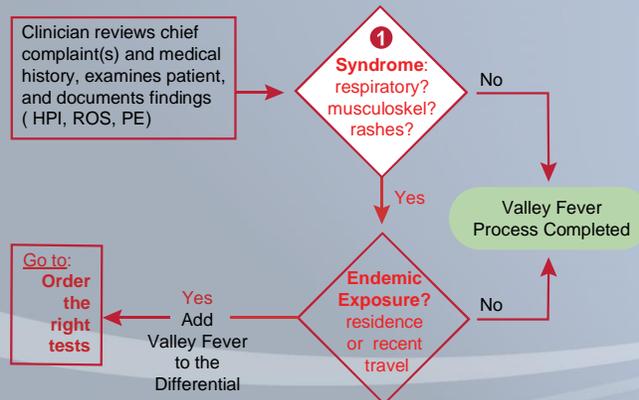
Recognition, Evaluation and Management of Coccidioidomycosis (Valley Fever)

Just Remember **C-O-C-C-I**

RECOGNITION

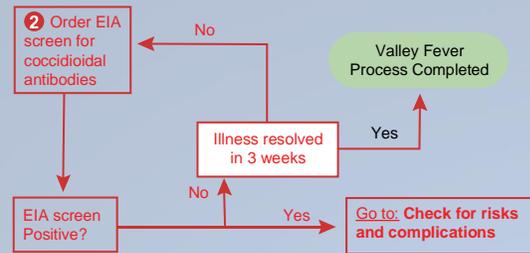
C 1 Consider the diagnosis

Respiratory: Previous visit, needs X-ray or antibacterial Rx?
Musc/Skel: More than one week, associated with fever or fatigue.
Rashes: *E. nodosum* or *E. multiforme*



RECOGNITION continued

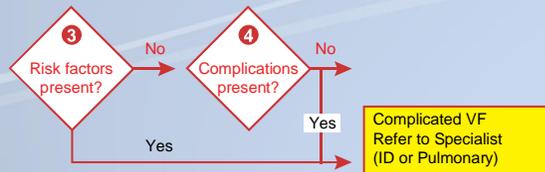
O 2 Order the right tests
EIA screen for coccidioidal antibodies with reflex to immunodiffusion and quantitative CF.



EVALUATION

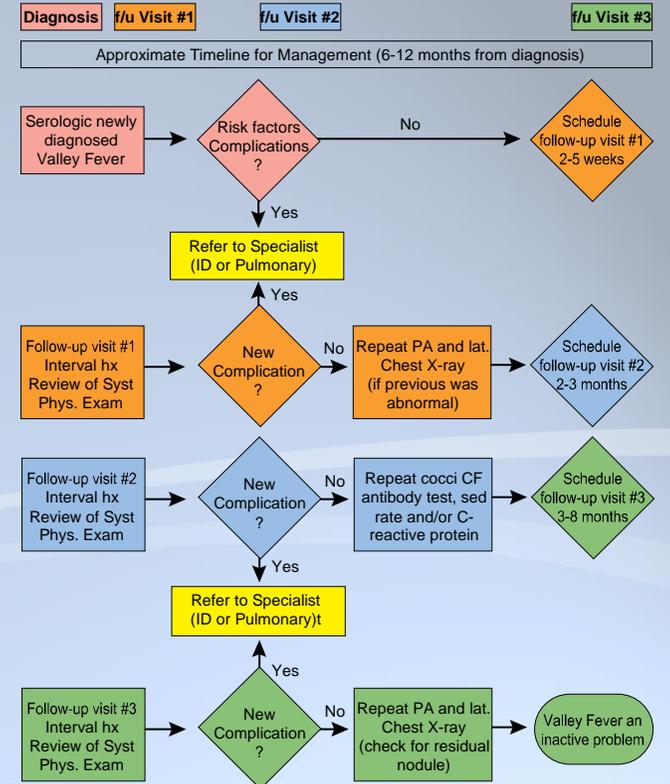
C 3 Check for Risk Factors
Immunosuppression (HIV, organ recipient, Rheum/GI/Derm response modifier Rx, renal failure
Diabetes, major cardiac or pulmonary comorbidities, pregnancy

C 4 Check for complications evident by PE exam or imaging
Focal ulceration or inflammation of skin/soft tissue
Asymmetric skeletal pain, joint effusions
Progressive or unusual headache



MANAGEMENT

I Initiate Management, Uncomplicated VF



The Valley Fever Tool Kit

Training Resources

- Process flow pocket guide
- CME presentations at individual clinical practices.
- Powerpoint training presentation online
- Primary Care Tutorial



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Support Resources

- Wall posters and patient educational brochures
- Nurse Navigator referral support? (proposed)
- EMR alerts? (only if wanted by the clinicians)



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Metrics to Track Implementation

- # of EIA serologies ordered
- % of EIA tests that are positive
- # of new ICD10 diagnoses of Valley Fever
- # of antibacterial Rx are written before Valley Fever diagnosis
- % of new Valley Fever patients are referred for Infectious Diseases or Pulmonary consultation



Summary

- Banner Health and the UA Valley Fever Center for Excellence are changing the way Arizona clinicians recognize and manages patients with Valley Fever.
- Central to this change will be the expanded roll of primary care clinicians in earlier diagnosis and management of uncomplicated VF.

New Banner Clinical Practice for Ambulatory Management of Valley Fever Thank-You



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For more information: [https://vfce.arizona.edu/education/
banner-valley-fever-clinical-practice-toolbox](https://vfce.arizona.edu/education/banner-valley-fever-clinical-practice-toolbox)